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ClaimsREPLACED BY
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1. A equipment for spread spectrum communication comprising:
a toggle detecting unit configured for detecting a candidate of
a toggle point existing in a carrier of a received signal;
a demodulating unit configured for demodulating the received
signal by multiplying the received signal by a spread code
which is shifted according to a shift amount calculated based
on a result of the detected candidate.
2. The equipment as claimed in claim 1, wherein said toggle
detecting unit is configured for detecting the candidate of the
toggle point by correlating between the carrier of the received
signal and a pre-held expected signal, and the pre-held
expected signal is a signal including a waveform of the toggle
point which is expected to be in the carrier of the received
signal and is a signal having length corresponding to 2
chip-times of the spread code or is a signal having shorter
length than it.
3. The equipment as claimed in claim 1, wherein said toggle
detecting unit is configured for outputting a toggle signal as
a result of detecting of the candidate of the toggle point, a
candidate of the shift amount which is to be provided to the
spread code is calculated based on cross-correlation of the
toggle signal and absolute value of differentiated value of the

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spread code, said demodulating unit is configured for demodulating the received signal by shifting the spread code with respect to the each candidate of the shift amount, and effectiveness of a carrier spectrum of the received signal demodulated in the demodulating unit is inspected.

4. The equipment as claimed in claim 3, wherein the candidate of the shift amount which is to be provided to the spread code is calculated by correlating between Fourier transformed value of the toggle signal and Fourier transformed value of the absolute value of differentiated value of the spread code.

5. A high-speed synchronization establishing method for spread spectrum communication comprising:

the first step of detecting a candidate of a toggle point existing in a carrier of a received signal,

the second step of calculating a shift amount based on a result of the detected candidate, and

the third step of demodulating the received signal by multiplying the received signal by a spread code shifted according to the calculated shift amount.

6. The high-speed synchronization establishing method for spread spectrum communication as claimed in claim 5, wherein an expected signal which includes an waveform of the toggle point expected to be in the carrier of the received signal and has length corresponding to 2 chip-times of the spread code or has shorter length than it is prepared previously; and

the candidate of the toggle point is detected by correlating between said expected signal and the carrier of the received signal in said the first step.

7. The high-speed synchronization establishing method for spread spectrum communication as claimed in claim 6, wherein a toggle signal as a result of detecting of the candidate of the toggle point is outputted in said the first step,

a candidate of the shift amount which is to be provided to the spread code is calculated based on cross-correlation of the toggle signal and absolute value of differentiated value of the spread code in said the second step,

the received signal is demodulated with respect to the each candidate of the shift amount and effectiveness of a carrier spectrum of the demodulated received signal is inspected in said the third step.

8. The high-speed synchronization establishing method for spread spectrum communication as claimed in claim 7, wherein Fourier transformed value of the toggle signal and Fourier transformed value of the absolute value of differentiated value of the spread code are correlated when the candidate of the shift amount which is to be provided to the spread code is calculated in said the second step.